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An analytical framework for urban upgrading: property rights, property values and physical attributes

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Abstract

In the mid-1980s, the state government of Maharashtra, India, introduced a slum redevelopment strategy in its capital city, Mumbai (Bombay). In contrast to traditional housing improvement strategies that focus primarily on legalizing the land tenure of residents, slum redevelopment is a more complex strategy. It involves the demolition of existing slums and the redevelopment of new, higher density, medium-rise apartment blocks, including, entirely cross-subsidized housing for the original slum dwellers. Mumbai's experience, documented through a single case study in this paper, illustrates that contrary to the conventional focus only on private property rights, upgrading policy must be based on a differentiated view of property rights. Furthermore, policy must also consider the property values, the physical attributes of the real property (underlying asset), and the interplay among property rights, property values and physical attributes. Second, the paper demonstrates that under certain conditions, there is a constituency among slum dwellers for complex initiatives, like redevelopment. This suggests that planners should be skeptical about popular, simplistic myths regarding low-income housing preferences. However, slum redevelopment's slow pace also implies that planners need to be cautious in their enthusiasm for redevelopment.
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Keywords: Dharavi; Mumbai; Slum upgrading; Slum redevelopment; Tenure legalization

1. Introduction

This paper proposes an alternative framework for analyzing upgrading, or housing improvement and consolidation, strategies in developing countries. It focuses on an unconventional, slum redevelopment strategy in Mumbai (Bombay), India, and contrasts it with the more traditional strategy of slum upgrading through tenure legalization. Tenure legalization is

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predicated on a positive causal relationship between secure private property rights for squatters leading to housing improvement through private investment. However, the evidence in the paper suggests that focusing only on secure property rights is inadequate. Formal property rights can not only impact the security of tenure of beneficiaries but they can also define and constrain the beneficiaries' abilities to develop and capitalize on their land parcels. Furthermore, housing improvement processes are much more complex than the conventional policy suggests. A balanced view of housing improvement processes demands recognition of at least three conditions: the property rights, the property values and physical attributes of the underlying assets, and their impact on each other.

In the mid-1980s, when Mumbai was still officially known as Bombay, the Maharashtra state government initiated the slum upgrading program (SUP) with the support of the World Bank. Mumbai is India's richest city and the capital of the state of Maharashtra. It has the highest real estate values in the country and also one of the largest percentages of slum dwellers. SUP offered secure tenure to the city's slum dwellers. The policy-makers set a target of upgrading 100,000 houses. However, only slightly over 22,000 households opted for tenure legalization (World Bank, 1997). In contrast, the slum dwellers' response to an innovative slum redevelopment strategy was surprisingly positive. The strategy involved the demolition of existing slums, redevelopment of the sites at a higher density into medium-rise, apartment blocks, including on-site, cross-subsidized housing for the slum dwellers. It was introduced as a pilot project, also in the mid-1980s, again by the state government but with the central government's financial support. In the early 1990s, it was extended to the entire city. By August 1998, 367 proposals to redevelop the slums with 75,689 households of slum dwellers had been approved by the state government (Slum Rehabilitation Authority, 1998). These proposals were supported by the slum dwellers as they expected to receive more valuable housing.

The demand demonstrates that, under certain conditions, there is a constituency among the slum dwellers for more complex strategies. It suggests that planners need to be skeptical about simplistic myths regarding housing preferences of the poor. Myths such as the slum dwellers' dislike for medium-rise living, their preference for sharing social amenities, etc., can be counter-productive. However, planners also need to be realistic about the slum redevelopment strategy. Although, the strategy enjoys some support from slum dwellers, it is difficult to implement. Thus, Mumbai's experience indicates that although traditional tenure legalization programs may not be attractive enough for slum dwellers, slum redevelopment may be too difficult to accomplish. This suggests that there is a need to think unconventionally. Successful housing improvement policies might combine attributes of the slum upgrading and the slum redevelopment approaches.

These arguments are illustrated in the paper through the story of Mumbai's experience with slum redevelopment. In particular, I focus on the case of the Markandeya slum in Dharavi, central Mumbai. The case illustrates the interplay between changing property rights, property values and physical attributes of housing. The case-narrative is based on a year's field-work in Mumbai. The data comes, primarily, from open-ended interviews with key stakeholders. These accounts have been supplemented with secondary sources, such as project documents, government reports and newspaper articles.

The main body of the paper starts with a literature review focused on the strategy of slum upgrading through tenure legalization. The review discusses the issues of property rights, property

values and housing conditions in the context of the conventional slum upgrading strategy. The next two sections describe the story of Markandeya's redevelopment. The first section elaborates the physical context for redevelopment. The second illustrates the changing property rights, property values and housing in the settlement. The final section recapitulates the arguments and assesses the findings of the case in the context of housing literature and policy.

2. The conventional wisdom: slum upgrading through tenure legalization

2.1. From slum clearance to slum upgrading and secure property rights

Around the middle of the twentieth century, many developing countries initiated slum clearance programs. Governments played a key role in such projects. To a large extent, the incentive of redeveloping prime real estate for a land use other than low-income housing drove the projects. But there was also a disdain for housing conditions within the slums and the belief that the slums had to be demolished and slum dwellers re-housed in new, modern housing. Typically, however, the redevelopment programs only led to a loss in the total number of housing units. They did not necessarily benefit the poor residents (Abrams, 1966). By the 1960s, the Modernist housing strategies were being strongly criticized for aggravating the housing shortage (Abrams, 1966). They were also criticized for their flawed belief in physical determinism (Perlman, 1976), and their reliance on unsubstantiated assumptions about the physical preferences of beneficiaries (Turner, 1968). Partly because of the criticism, and in part because of the lack of funds, the demolition and redevelopment ideas became less prominent in housing strategy. Instead, policy focus shifted to programs of housing improvement within existing settlements.

The World Bank, particularly influenced by John Turner's seminal work (Turner, 1963, 1967), promoted a strategy of tenure legalization, through its SUP. These programs were aimed at transforming squatters into legal owners (Dunkerley, 1983). Many researchers associated with the World Bank argued that security of tenure leads to investment in housing (Friedman, Jimenez, & Mayo, 1988; Jimenez, 1983; Malpezzi & Mayo, 1987). Critics, however, questioned the logic of the World Bank's tenure legalization strategy. They argued that other factors, such as perceived security of tenure through the passage of time (Doebele, 1983), or informal property rights through social norms (Razzaz, 1993), may be more important in housing improvement.

The debates in the literature have focused on whether or not legal property rights are necessary. Surprisingly, there is very little discussion about what kind of formal property rights are provided through the legalization process, and what is the impact of different bundles of rights on housing improvement. The literature appears to treat the legalization of property rights as a State-mandated guarantee against eviction and a right to develop land in a *laissez faire* manner. However, property rights, in particular, development rights in land, are more complex and sophisticated instruments. Land development rights can vary in at least three fundamental ways. First, the amount of area that can be built on a site can vary. Second, the kind of land use that is permitted on a site may be different. Third, the ownership of the rights, i.e. private, public or common, can differ. Despite such operational variation, there is little analysis of the impact of distinctions in formal property rights in the context of slum upgrading.

2.2. Slum upgrading and housing attributes

Most of the literature on slum upgrading pays little attention to the potential impact of the physical conditions within squatter settlements on successful housing improvement. An indicator of the drawback in the literature is the complete absence of line-drawings of either the individual properties or of the settlements being discussed.[1] To some extent, this is logical because one of Turner's main arguments was that housing conditions at a specific point in time do not matter as housing is dynamic and improves over time. The literature, however, appears to assume physical characteristics of slums that allow it to avoid analyzing the impact of the physical conditions on the success or failure of housing improvement strategies. Based on the work of William Mangin and John Turner in the *Barriadas* of Lima, Peru (Mangin, 1967; Mangin & Turner, 1968; Turner, 1967); the two physical assumptions underlying the literature are-

(1) Low-income settlements are clearly and regularly laid out.
(2) The individual lot-sizes within the settlements are "reasonably" large.

In his seminal paper "Latin American Squatter Settlements: A Problem and a Solution," Mangin (1967) critiqued the existing literature. He described eight common myths about squatter settlements and squatter populations: squatter settlements are chaotic and unorganized; are formed by rural migrants; are composed of substandard straw houses; are an economic drain on the nation; are marked by social pathologies; are isolated and alienated from the cities; are high in illiteracy and low in education levels; and finally, are hotbeds of and breeding grounds for communism. Based on evidence from Peru, Mangin challenged all the eight myths. Specifically, Mangin argued that the internal structure of squatter settlements was clearly laid out (1967).[2] A substantial amount of research work has built on his observations and has argued that low-income settlements follow a gridiron pattern (de Soto, 1989; Ward, 1982b) and mimic urban layouts (Baross & van der Linden, 1990; Payne, 1989).

Secondly, the literature suggests that lot-sizes are not small. They are reasonably large, i.e., larger than $50\,m^2$, although, lot-sizes of over a $100\,m^2$ are not uncommon in low-income settlements. John Turner's work is noteworthy and characteristic (1967). He described lot-sizes of $1200\,ft^2$ ($110\,m^2$) in the *Barriadas* of Lima. Other scholars have made similar observations (Pikholz, 1997; Silas, 1984; Tokman, 1984; Ward, 1982b).[3] These two physical attributes—reasonably sized lots within well laid-out settlements—are ideal for an in-situ slum upgrading policy. The regular layout makes it easier to provide infrastructure. The large lot-sizes make it feasible for residents to follow an incremental housing consolidation strategy. However, the lack of the two conditions can make conventional upgrading difficult and less attractive.[4]

[1] For example, see Fernandes and Varley (1998); Peattie (1968); Rodwin (1987); Turner and Fichter (1972); or Ward (1982a).

[2] Also see Mangin and Turner (1968).

[3] Lynn Pikholz described reconfigured plots of around $250\,m^2$ ($2700\,ft^2$) in South Africa (1997). K. Tokman pointed out that the densities in Ankara's *Gecekondus* were lower than the densities in the middle or high-income settlements of the city (1984). Johan Silas (1984) claimed that in the *Kampungs* of Jakarta and Surbaya, more than 50 percent of the building plots had an area of over $50\,m^2$ ($540\,ft^2$), and over 30 percent exceeded $100\,m^2$ ($1080\,ft^2$). Finally, Peter Ward found plots of $200\,m^2$ ($2150\,ft^2$) in Mexico City (1982b).

[4] For an elaboration of this issue, please see Mukhija (2001a).

2.3. Slum upgrading and property values

The slum upgrading literature recognizes that property values may increase significantly as a result of tenure legalization. Moreover, the increased property values can lead to higher rents and, therefore, the displacement of poor tenants (Gilbert & Varley, 1991). The insight of the argument is that across settlements, the composition of residents can vary, and there can be settlements with a large number of tenants who may suffer as a consequence of tenure legalization. The argument, however, does not focus on the variation in property values across settlements, and how such variation may impact the beneficiaries' decisions about housing improvement strategies. The conventional wisdom suggests that land values, without exception, are low in squatter settlements.

The literature's position that the poor live on land of low value is captured by Gilbert and Ward (1988). In their paper, *Land for the Rich*, *Land for the Poor*, the authors argued that the poor occupy land of low value because of its inherent characteristics (height, soil, etc.) as well as acquired characteristics (infrastructure servicing, social character, etc.). In other words, the poor start with "poor" land and their land gets "poorer" over time. However, cities of the developing world have been growing at a quite significant rate, and many low-income settlements, in once peripheral and marginal locations, now occupy more strategic locations. The central location, an acquired characteristic, can provide potentially higher land values through redevelopment.

2.4. Slum upgrading and government's role

Critics attributed the failure of slum clearance and urban renewal projects to the involvement of governments (Turner, 1972). According to them, governments' involvement in housing tended to be counter-productive, and not in the best interest of the poor beneficiaries. In developing countries, slum upgrading was advocated as a strategy that could be pursued without the active involvement of governments. On the contrary, it was a people-oriented strategy, in which individuals and communities could more efficiently control the outcomes (Hasan, 1988; Peattie, 1968; Turner, 1967, 1977; Turner & Fichter, 1972).

John Turner argued that governments should cease doing what they did badly, i.e., building and managing housing. He proposed that users should be the principal actors and they should have the *Freedom to Build* (1972). The chief progressive outcome of Turner's advice was a gradual realization that housing conditions can improve in squatter settlements over a period of time. He was responsible for an easing of slum clearance programs. However, there were two main critiques of Turner's ideas. First, it assumed that the absence of State intervention would lead to more autonomy for low-income groups. This is unlikely, however, because for the vast majority of the poor, choices are constrained (Gilbert, 1982; Ward, 1982a). Second, there were a number of questions, but little elaboration, on how to implement and institutionally support upgrading.

The following case from Mumbai suggests that there are shortcomings in the literature. The case demonstrates complex variations within property rights and shows how those variations impact housing improvement strategies and the priorities, and choices, of beneficiaries. It also reveals that the physical structure of Mumbai's slums does not match the assumptions in the literature. Furthermore, property values in the city's low-income settlements are not necessarily low. Finally, the case demonstrates the value of complex housing improvement strategies.

3. The physical structure of properties in Dharavi

3.1. Dharavi's changing geography

Dharavi is one of the largest slums in Asia. It is in the center of Mumbai. At the end of the nineteenth century, however, when Dharavi started developing as an urban settlement, it was a peripheral swamp. Its isolation from Mumbai and its proximity to a slaughterhouse made it an attractive location for leather tanneries (Dwivedi & Mehrotra, 1995). Over the next 100 years, Dharavi's businesses diversified, workers migrated and squatted, and the settlement expanded. Concurrent with Dharavi's growth was the city's physical expansion.

3.2. Two housing improvement policies

In 1985, to improve living conditions in the city's slums, including Dharavi, the state government introduced the Bombay Urban Development Project. An integral component of the World Bank assisted project, was a program of tenure legalization, the SUP. SUP was in accordance with the prevailing wisdom. Its central focus was a 30-year renewable, leasehold tenure for slum dwellers' cooperatives. Although, policy-makers were keen on private property rights, they considered it difficult to demarcate individual properties and provide private titles. Individual owners, however, would have the legal rights to improve and consolidate their properties. The state government planned to implement the project on a cost-recovery basis. It set a project target of 100,000 households. However, in 1994, when the program was closed after a 4-year extension period, only 22,204 households had opted for legal tenure (Panwalkar, 1996). The World Bank blamed an alternative state government policy for the low interest in SUP (World Bank, 1997).

While the World Bank project was launched in January, in December of 1985, the state government introduced the Prime Minister's Grant Project (PMGP) with the central government's financial support. To implement the project, the state government established a special institution, also called the PMGP, within the state housing authority. In 1987, the PMGP presented Dharavi's slum dwellers with two program choices (Dua, 1989). The slum dwellers could either opt for traditional tenure legalization or an unconventional, slum redevelopment option: Slum Reconstruction. Slum Reconstruction also provided legal tenure but involved the demolition of existing slums and the development of new, medium-rise, apartment housing for the slum dwellers on the original sites. Although, both options were planned to operate, primarily, on a cost-recovery basis, the redevelopment option was almost 10 times more expensive. However, redevelopment also included a direct subsidy of 15 percent and a partial interest-free loan (almost 20 percent of the cost) from the PMGP. The PMGP's funds were only sufficient to initiate the redevelopment of 3800 units (MHADA, 1993).[5] However, PMGP's officials claim that the demand from Dharavi's slum dwellers was much more than what they had expected.[6]

[5] The PMGP planned to redevelop 2000 units on the original slum-sites and 1800 units on alternative sites in Dharavi. The off-site relocations were planned to resettle slum dwellers from land expropriated by the PMGP to facilitate road-widening and other infrastructure improvements in Dharavi.

[6] Multiple interviews with ex-PMGP officials between August 1997 and August 1998. The officials interviewed included two former Directors of the PMGP, Mr. Gautam Chatterji and Mr. V.G. Gorde.

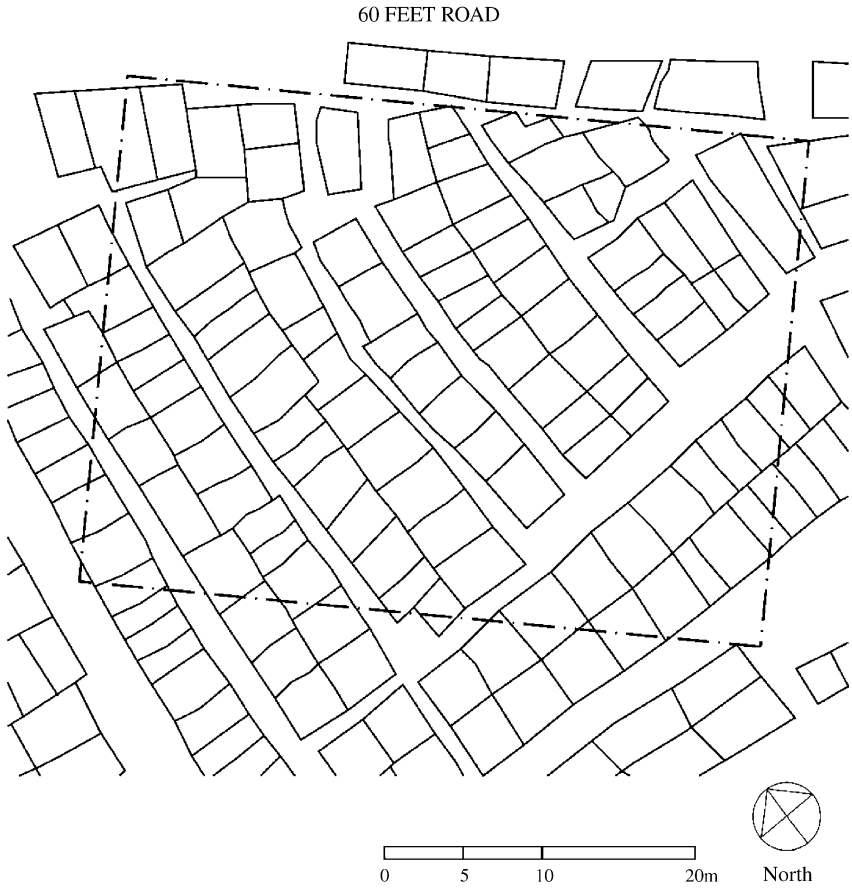

Fig. 1. Survey layout of Markandeya, 1987.

3.3. Rajendra Prasad Nagar and the Markandeya Slum

The PMGP selected 12 peripheral parts of Dharavi with easy road access for the pilot projects (MHADA, 1993). In 1988, one of the areas selected for Slum Reconstruction was Rajendra Prasad Nagar. On the north-east end of Rajendra Prasad Nagar, along the 60 feet road, was the Markandeya slum.[7] Markandeya was to be a part of the first phase. Like other pockets, and contrary to the expectations in the literature, Markandeya had small lots, densely and irregularly laid out (Fig. 1). Most lot-sizes were between 100 and 120 ft^2 (9–11 m^2). The houses were 12–14 ft (3.7–4.3 m) high and included a small loft; 4–5 ft (1.2–1.5 m) high. The lofts were used for storage and sleeping. Most of the huts at Markandeya were used for housing. Of the 92 huts, only 11, facing the 60 feet road, had a commercial (retail) land use.

[7] For an alternative narrative of the Markandeya case, from an institutional perspective, please see Sanyal and Mukhija (2001).

Unlike the other slum settlements of Dharavi, where the PMGP was responsible for implementing the redevelopment projects, at Markandeya, a cooperative of the slum dwellers had decided to work with a non-governmental organization (NGO), the Society for the Promotion of Area Resource Centers (SPARC). SPARC had persuaded the Markandeya Cooperative Housing Society (MCHS) that working independent of the PMGP, the cooperative would be able to build larger housing at a lower cost. The cost saving was to be achieved by eliminating the possibility of the PMGP's bureaucratic inefficiency and corruption, and by keeping the new project low-rise. SPARC also argued that the low-rise project would be, culturally and socially, more suitable to the lifestyle of the low-income slum dwellers of Markandeya.

4. Changing property rights, property values and physical attributes

4.1. Markandeya's redevelopment into a low-rise courtyard structure

Although, the existing regulations only permitted housing units of 180 ft^2 (17 m^2), SPARC had promised the MCHS new housing with a carpet area of 280 ft^2 (26 m^2).[8] SPARC recommended a new housing typology of 14 ft (4.3 m) high floors, including 6 ft (1.8 m) high lofts. It proposed to limit the floor-plate of the Markandeya's units to 180 ft^2, but proposed an additional loft area of 100 ft^2 (9 m^2). Architects, commissioned by SPARC, prepared a design with rectangular units of 10×18 ft^2 (3.0×5.5 m) organized around a central courtyard. But contrary to SPARC's initial hopes, the Markandeya project was designed as three floors high to accommodate all the existing households. However, only two-thirds of the top floor was needed for the housing units, the rest was to be a community terrace.

To further increase the usable living area for the beneficiaries, SPARC proposed common external toilets; two for every nine families.[9] The toilets were in addition to the attached bathrooms being provided inside the housing units. SPARC argued that the water supply in Dharavi was undependable and the toilets were likely to stink. External toilets would be more hygienic. SPARC also argued that, apart from allowing for more living space, the common toilets would be cheaper, and would provide an opportunity for social interaction among queued-up users. The NGO's premise was that low-income groups enjoy and prefer such opportunities for social contact as opposed to the middle-classes that desire privacy. Perhaps most importantly, SPARC hoped that the shared toilets made the housing units unattractive to middle-class buyers, thus reducing the possibility of gentrification.

4.2. State suspicion of future encroachment

In early 1989, Markandeya's project-architect submitted the design proposal to the PMGP for approval. The PMGP officials had a number of reservations about the proposal. They told the

[8] Carpet area refers to the directly usable area. It does not include the walls and external circulation areas. As a rule of thumb, the carpet area of a housing unit in an apartment in Mumbai is around 70 percent of the total built-up area.

[9] Before the redevelopment, almost 400 families, including the MCHS' members, shared a 20-seat toilet block. The new design, despite the sharing, was more than a five-fold improvement.

architect that they could not approve the 14 ft (4.3 m) high floors because the municipal corporation's rules allowed a maximum height of 10 ft (3.0 m). PMGP suspected that the MCHS' members would be forced to sublet their lofts to pay for their larger housing loans. This would increase Dharavi's density and put more pressure on its infrastructure. Furthermore, the PMGP also objected to the community terrace on the top floor. They suspected that the terrace was likely to be encroached in the future, further adding to the population and density of the area. The PMGP was aware that the land development regulations allowed a floor area ratio (FAR) of 1.33 in Dharavi but the consumed FAR in the Markandeya design was only 1.17.[10] If, however, the terrace were covered, the consumed FAR would be exactly 1.33!

But SPARC argued that the PMGP could not force the MCHS to consume the maximum allowed FAR for the site. Instead, SPARC and the MCHS applied to the municipal corporation for construction permission. In October 1989, they received special permission and construction started with the members' down-payments. Progress, however, was slow because of the shortage of funds and the lack of progress on the MCHS' housing loan application. Moreover, the contractor pointed out that a more elaborate and expensive precast pile foundation was needed to support the building structure in Dharavi's marshy terrain.

In March 1991, the PMGP ordered the MCHS to stop construction of the project. The PMGP claimed that since the Markandeya project was a low-cost housing scheme developed with the support of the state housing authority, it was eligible to be developed at the FAR of 1.60.[11] Furthermore, the PMGP argued that according to the new format, for calculating FAR, introduced by Mumbai's revised Development Control Regulations in 1991 (Government of Maharashtra, 1991), the actual consumed FAR in the Markandeya project was only 0.95.[12] The PMGP calculated that if the Markandeya project consumed the allowed 1.60 FAR; 62 additional units could be built on the same site, with the same basic design, by adding more floors to the proposal. PMGP argued that it needed the additional units to resettle other residents of Rajendra Prasad Nagar, who were displaced to make room for community infrastructure.

SPARC objected. It claimed that the MCHS was uninterested in utilizing the maximum development potential of the site. Moreover, it argued that the PMGP's real concern was that it was threatened by the project's demonstration that it was feasible to resettle Dharavi's residents in low-rise structures as preferred by the slum dwellers. It believed that the PMGP wanted to disrupt its plan for low-rise housing. Furthermore, SPARC argued that the Markandeya project was not a public sector project but a community project and, therefore, not eligible for the enhanced FAR of 1.60. After 7 months of argument and a halt in construction activity, in December 1991, both sides compromised. They agreed on a FAR of 1.33 (non-State projects) as advocated by SPARC. However, they also agreed to use the revised method of calculating FAR (1991 regulations) as demanded by the PMGP (Table 1). Accordingly, the Markandeya project was to have four floors. The MCHS was to hand over 37 units to the PMGP, at the cost of construction, when the project

[10] FAR is the ratio of the constructed floor area in a project to the area of the site. In Mumbai, the term floor space index (FSI) is used. It is calculated in the same manner as FAR.

[11] The usual FAR for housing projects in Dharavi is 1.33. However, since Rajendra Prasad Nagar was being developed by the public sector, it was eligible for a 20 percent FAR bonus, increasing the allowed maximum FAR up to 1.60 (Regulation 33(5), Government of Maharashtra, 1991).

[12] According to the revisions in the Development Control Regulations; circulation areas and toilet blocks were not to be included in the FAR calculation (Government of Maharashtra, 1991).

Table 1
Additional units at the Markandeya CHS

Method of FAR and built-up area calculation	FAR	Built-up area (m^2)	Extra units for PMGP	Total units	Note
Pre-1991 DCR[a]	1.17	2256.80	—	94	Proposed by SPARC
Post-1991 DCR	1.60	3086.22	62	156	Proposed by PMGP
Post-1991 DCR	1.33	2565.42	37	131	Compromise

[a] DCR = development control regulations.
Source: Purbi architects, Markandeya CHS.
Note: The above built-up area refers to the net built-up area. Markandeya's effective plot size is equal to 1928.89 m^2. This includes 593.89 m^2 of area lost through road widening.

was completed. But, SPARC and the MCHS had no intention to build the extra units, nor did they have the funds to finance the additional construction.

4.3. Adding more floors: change in property rights and physical attributes

Due to the lack of finance, construction work at Markandeya continued to be slow. SPARC and the MCHS blamed the contractor for his inability to invest in the project while the cooperative awaited its housing loan from the housing finance corporation, the Housing and Urban Development Corporation (HUDCO). In the second half of 1993, on the architect's advice, the cooperative decided to replace the old contractor with a new one, Shayambhai Patel of Parth Construction. The new contractor was willing to invest his resources, and complete the project by early 1995. He was, probably, aware of a new state government program, the Slum Redevelopment Scheme (SRD). The SRD was introduced in 1991 to build upon and extend the Slum Reconstruction project of the PMGP to the entire city. Similar to Slum Reconstruction, the SRD was based on a strategy of demolishing existing slums and housing the slum dwellers on-site, in new apartments of 180–225 ft^2 (17–21 m^2) carpet area. Unlike the PMGP's program, the SRD allowed private developers to be promoters in redeveloping the slums and the slum dwellers were expected to pay only Rs. 15,000 (23 percent of the estimated cost) for their new houses. To make this viable, the program changed the land development regulations for slum-encumbered land. The new property rights permitted a higher density and intensity (FAR) of development. This allowed for extra units to be constructed and sold, at the market-price to outsiders, generating a cross-subsidy for the slum dwellers and profits for the project promoters. The program also allowed for old PMGP projects, still under construction, to be developed as SRD projects.

The new contractor knew that it was technically and legally feasible to build more units in the Markandeya project. But there were two caveats. First, the two additional floors had to be limited to 10 ft height, to limit the load on the project's structure. Second, internal toilets had to be provided for the market-sale apartments. This meant that new plumbing lines had to be incorporated into the design. The contractor proposed to the MCHS that, if they had no objection to the Markandeya building being two floors higher, the contractor and the cooperative could develop Markandeya as an SRD project. The proposal would allow the MCHS to complete the

Table 2
Unit statement at the Markandeya CHS, May 1996

	Units
Markandeya cooperative's members	92
Markandeya cooperative's office	1
PMGP (commercial)[a]	1
Contractor/developer	86
Total	180

[a] The PMGP was instituted within the Maharashtra Housing and Area Development Authority (MHADA). By 1996, the PMGP was dissolved and its responsibilities and assets were transferred to MHADA. The Markandeya Cooperative was asked to convey a commercial unit, initially intended for the PMGP, to MHADA.
Source: Annexure II, SRD application, Markandeya CHS, October 31, 1996.

project without any additional loan installments. Moreover, the MCHS' members would have the option to include internal toilets, although, at an extra cost, but it would increase the value of their housing. In return, the contractor expected to sell all additional units allowed by the state government in the free-market.[13]

The MCHS agreed to the contractor's proposal of adding additional floors. In October 1996, the state government approved the Markandeya project's SRD application (Table 2). It permitted a five floors high structure with 180 units (Fig. 2). Moreover, almost half of the MCHS' members opted to pay the contractor for having their bathrooms refitted with internal toilets.

4.4. Medium-rise living as an outcome of new property rights

In January 1998, 10 years after the MCHS' first redevelopment plan was prepared, members' apartments were completed and they started occupying their new houses. Interestingly, contrary to SPARC's expectations, Markandeya's members demonstrated a preference for upper floors as opposed to the first floor. All the present and past managing committee members live on the second and third floors. The managing committee had the first chance to select their housing units in the building. After the managing committee, the MCHS' members who had made their due-payments in full, were allowed to select their houses. According to the committee's members, most households preferred the upper floors. They believed that the upper floors provided more protection from pollution, mosquitoes and noise (Fig. 3).

5. Conclusion

5.1. Popular low-income housing myths

The case study suggests that certain popular housing typology myths, such as slum dwellers always being against the idea of medium-rise housing, or the poor invariably preferring social

[13] To approve SRD projects, the state government instituted the SRD committee. One of the main functions of the committee was to discern the maximum allowed FAR in projects, in order to restrict profit for developers to 25 percent.

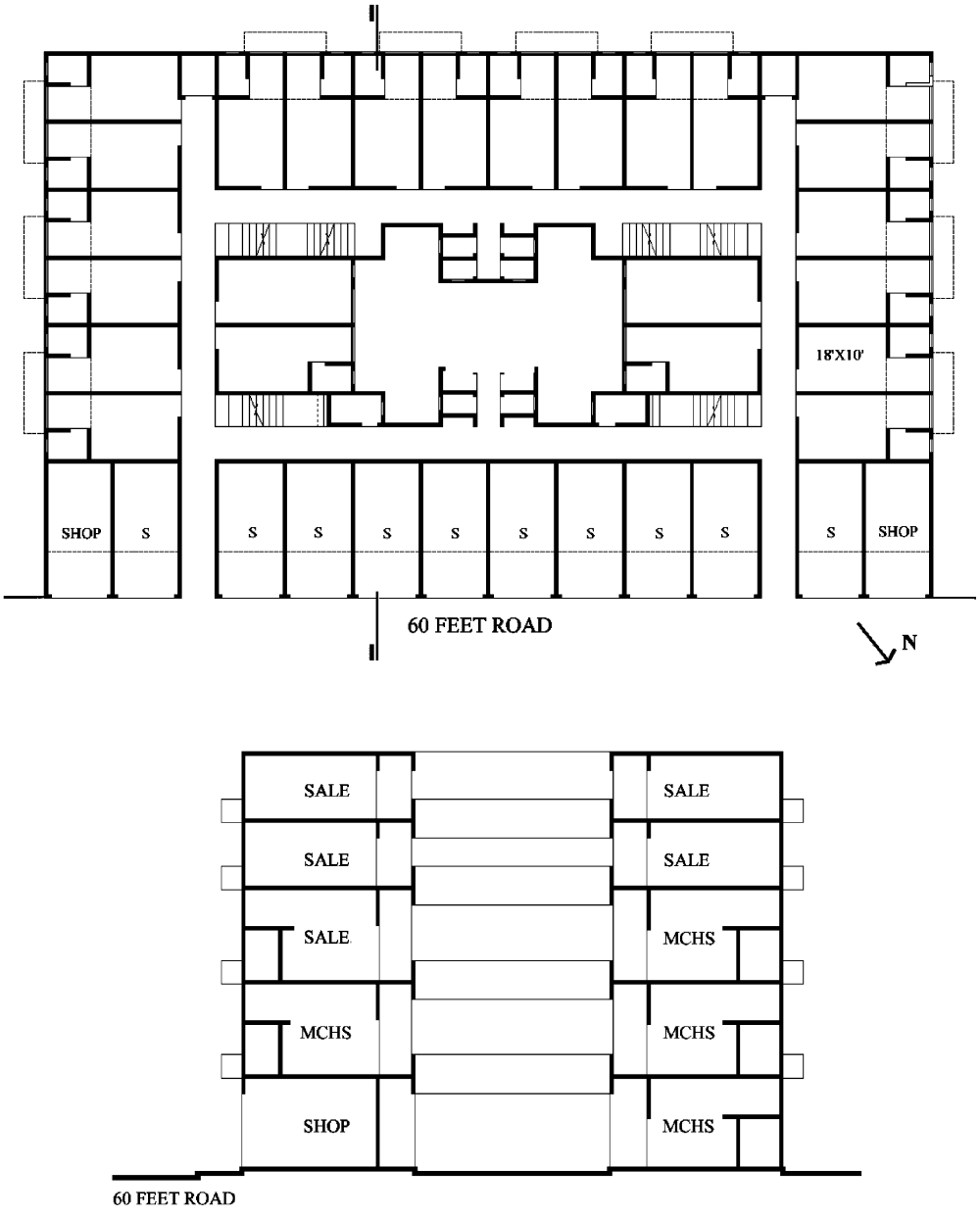

Fig. 2. Floor plan and section, Markandeya CHS, 1996.

interaction, and shared social spaces and amenities, can be misleading. In the Markandeya case, Mumbai's slum dwellers preferred living on the upper floors. They were keen on protecting themselves from the noise, smell and messiness of the street-level activities. Markandeya is not an exceptional case. Beneficiaries also expressed a similar preference for the upper-level apartments in other slum redevelopment projects in the city (Mukhija, 2000). The households were also

Fig. 3. A photograph of the Markandeya project, late 1997.

guided by the logic of the property market. At Markandeya, the upper-level housing units have a higher property value than the street-level units. This is a constant pattern throughout Dharavi's redeveloped slum-pockets. An exception to the rule, are the street-facing shop units. The shops have higher property values than all similar sized residential units.

In a similar vein, in divergence from the initial plan, half of the households decided that they were not keen on sharing toilets with their neighbors. Instead, they opted to add internal toilets to their apartments. They were guided by their own consumer preference, as well as a cognizance of a real estate market that values private internal toilets more than shared ones. It can be argued that the slum dwellers, contrary to the typical policy preference to avoid gentrification, were keen on keeping the option of selling their apartments open, and as financially beneficial as possible. The underlying policy recommendation that follows from the case is not fundamentally new. Rather than ascribing to myths while making assumptions, planners are advised to ask beneficiaries their preferences.

5.2. *Support for redevelopment: a paradox*

In terms of housing strategies, the Mumbai experience shows that contrary to expectations based on the conventional wisdom, there was a limited demand for slum upgrading through tenure legalization. However, the strategy of redeveloping slums has not been very successful either. The total number of projects that have been implemented is rather low. Table 3 also shows that only 2242 units had been completed for slum dwellers by August, 1998. In 1995, the newly elected state government of the *Shiv Sena* party replaced the Slum Redevelopment Scheme (SRD) with the Slum Rehabilitation Scheme (SRS) of "free-housing." SRS was based on a complete cross-subsidy and absolutely no direct financial contribution from the slum dwellers (Government of Maharashtra, 1997). Table 3 also shows that the demand for redevelopment from slum dwellers

Table 3
Slum Rehabilitation Scheme Projects in Mumbai, 1998[a]

		Proposals received	Proposals approved	Under construction	With occupation certificates
Total Schemes	No. of projects	446	367	145	26
	No. of units	NA	75,689	29,142	2242

[a] Includes projects that were initiated through the Slum Redevelopment Scheme.
Source: Personal communication, Slum Rehabilitation Authority, August 1998.

was significant, and larger than what critics had predicted (Patel, 1995; Singh & Das, 1995). However, as the Markandeya case illustrates, the strategy is difficult to implement. It took 10 years to implement the Markandeya project. The paradoxical evidence suggests that planners and policy-makers need to be cautious in their enthusiasm and support for the redevelopment strategy.

But what should planners and policy-makers do? What form of upgrading policy should they promote? The inherent difficulties involved in implementing the more complex redevelopment strategy do not necessarily lead to the conclusion that conventional slum upgrading based on tenure legalization, is the only plausible policy option. The next subsection proposes an alternative framework for analysis and decision-making. It argues that an appropriate policy response should be based on existing and potential property rights, property values and the physical attributes of the underlying housing. Such an approach is likely to lead to a more hybrid and varied strategies of upgrading.

5.3. An alternative framework for upgrading

Prevailing policy and literature are focused on secure tenure rights as the key instrument in improving housing in low-income squatter settlements. Mumbai's evidence also suggests that security of tenure is important. However, Mumbai's case differs from the orthodoxy in at least two major ways. The first difference is in Mumbai's varied and differentiated approach to tenure as a property right. Secondly, Mumbai's policy-makers have also focused on aspects other than tenure in their city's upgrading strategy. Contrary to most tenure legalization programs, Mumbai's SUP was not based on individual private property rights. Instead, beneficiaries' tenure was legalized on the basis of cooperatives. Mumbai's policy-makers decided to use the cooperative structure because it was difficult to define individual land-holdings in the city's haphazardly laid-out slums. Moreover, it was much easier to administer a few cooperatives as opposed to numerous individual beneficiaries. Finally, according to the existing property tax laws, the cooperative institutional structure ensured lower taxes for the beneficiaries.[14] A key outcome of the cooperative form was that it created an imperative for the cooperative's members to act collectively.

An important aspect of Mumbai's experiment is recognition of the importance of land development regulations, particularly FAR, in housing improvement and consolidation. New regulations, that are likely to be imposed after any tenure legalization process, are critical in

[14] The cooperative approach had already been implemented in the southern Indian city of Madras. Thus, there was precedence for cooperatives in upgrading and tenure legalization. Madras has recently been renamed as Chennai.

determining how much new development slum dwellers can formally build on their property. This implies that the process of deciding what the new regulations are, in terms of FAR, land use, density, standards, etc., is extremely central to the upgrading process and beneficiaries' preferences. The revised and newly imposed standards are a major aspect of the new formal set of property rights provided to the beneficiaries. They involve a changing set of incentives for the slum dwellers. However, there is very limited analytical work, or discussion, focused on standards for post-legalization contexts. In the Mumbai case, the land development regulations kept changing constantly. As a consequence, the slum dwellers' preference for the final form of their housing also kept changing. This suggests that upgrading policy must pay more attention to regulations and standards that are part and parcel of any legalization strategy.

A second variable that was important to the slum dwellers at Markandeya, was the property value of their housing assets. Beneficiaries were not treating their housing as merely "shelter." They were also thinking of it as "real estate." In 1988, when various slum-pockets in Dharavi were selected for Slum Reconstruction by the PMGP, the immediate impact on the selected houses was an almost overnight doubling of their market values. The increase in property values was in expectation of the more valuable housing that was to result through redevelopment. It helped motivate the slum dwellers to accept reconstruction. In 1995, when property values in the city were at a peak, the state government introduced a complete cross-subsidy scheme. The high property values played a key role in the slum dwellers' decisions to support the scheme. The high values suggested that a cross-subsidy was feasible. Moreover, the potential market value of the slum dwellers' new housing was at a historic high, adding to the incentive of redevelopment. Potentially high property values, not only open-up the possibility of cross-subsidy, they also suggest options that are, typically, not considered by policy-makers in upgrading. For example, Bangkok's experience with land sharing as a strategy of upgrading is linked to high land values in the city (Sheng, 1992). The Mumbai case emphasizes the suggestion that more complex options can be attractive to slum dwellers and should be considered. Existing and potential property values are, thus, important variables to consider in upgrading.

The importance of a third set of variables, the physical attributes of the underlying housing asset and the layout of the slum settlement, are also underplayed in the literature. In Mumbai, because the slums do not follow the model of well-laid out settlements with reasonably large lot-sizes, traditional, in-situ upgrading is less attractive to beneficiaries. The existing settlements lack sufficient space to provide social amenities and better infrastructure. Moreover, there is little scope for individual households to consolidate their own housing. The lot-sizes are too small. The lack of infrastructure, also, makes upgrading more difficult.[15] The Mumbai experience clearly suggests that policy-makers must also consider the physical structure of the slums that they intend to upgrade.

An important upgrading strategy that has gained tremendous attention of international development planners is Himanshu Parikh's slum networking approach. Slum networking is being

[15] Another example of how the asset-structure can play a key role in the housing improvement process is Markandeya's redevelopment story. A key advantage for the project was its courtyard plan. The typology made it possible for the cooperative to work with the private contractor to add additional floors and create a cross-subsidy. It would have been more difficult for the cooperative to pursue its strategy if the Markandeya project had been planned as a medium-rise project.

implemented in the Indian cities of Ahmedabad and Indore (Diacon, 1997; Nicholson, 1995; Verma, 2000). A key innovation of slum networking is the use of existing natural slopes and drainage channels as a sewer system. The innovation is based on an insightful recognition of the particular physical attributes of the settlements targeted for upgrading. Thus the slum networking experience, although quite different from Mumbai's strategy, also underscores the importance of identifying physical attributes and their strengths and weaknesses while framing upgrading strategies.

However, the key lesson that follows from Mumbai is not simply the impact of property rights, or property values, or the physical attributes, but how property rights, property values and the physical attributes impact each other. It is the interplay among the three that suggests that an appropriate framework to analyze housing improvement processes must consist of development rights (property rights), real estate values (property values) and housing conditions (physical attributes). As an analytical framework, this is likely to be more robust in explaining the success or failure of strategies and in suggesting appropriate policy responses.[16]

My conclusion is that upgrading policy in developing countries should strive for a middle-ground approach between a simplistic slum upgrading strategy and a complicated slum redevelopment approach. This might be in the form of lot-readjustments to ensure that infrastructure can be provided. It may include partial resettlements to free-up land for community amenities. It might also involve some rebuilding at higher densities to create partial cross-subsidies and to avoid off-site relocation. The lesson for policy-makers is that innovations are possible and necessary, even though the innovations might imply a more active government role in housing than accepted in the prevailing wisdom.

Policy must strive towards increasing the choices that slum dwellers have. We should create more flexibility and more options for beneficiaries. Policy-makers must eschew their fascination with single strategies. It is less relevant if the single strategy is conventional upgrading or unconventional slum redevelopment. Ultimately, single dimensional strategies limit the realm of opportunities for the beneficiaries. A multiplicity of options is likely to lead to more "freedom to build." This must be the policy objective.

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[16] The framework might also be broad and general enough to be relevant in understanding strategies as different as upgrading and redevelopment, and in situations as diverse as slums in developing countries and inner-cities in developed countries. For example, currently in American cities, there is an optimism regarding market-based revitalization strategies for urban neighborhoods (Carr, 1999). Prevailing property values are high, and it is argued that there is a strong demand for buildings with urban characteristics. Consequently, private investors are interested in inner-city properties. However, gentrification is a concern because existing communities, typically, lack the property rights to benefit from private investments in inner-city real estate. Not surprisingly, policy-makers are focused on mitigating the adverse impacts of gentrification by developing property rights for the poor through community land trusts (that hold assets in community ownership) or through the production of subsidized housing.

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